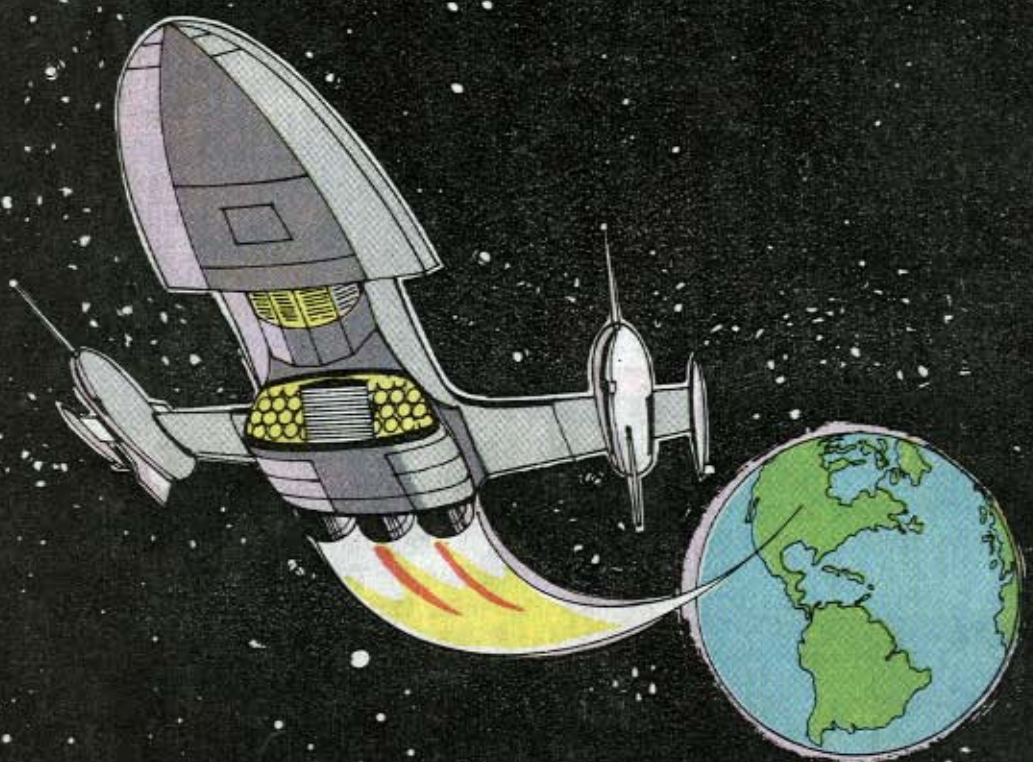
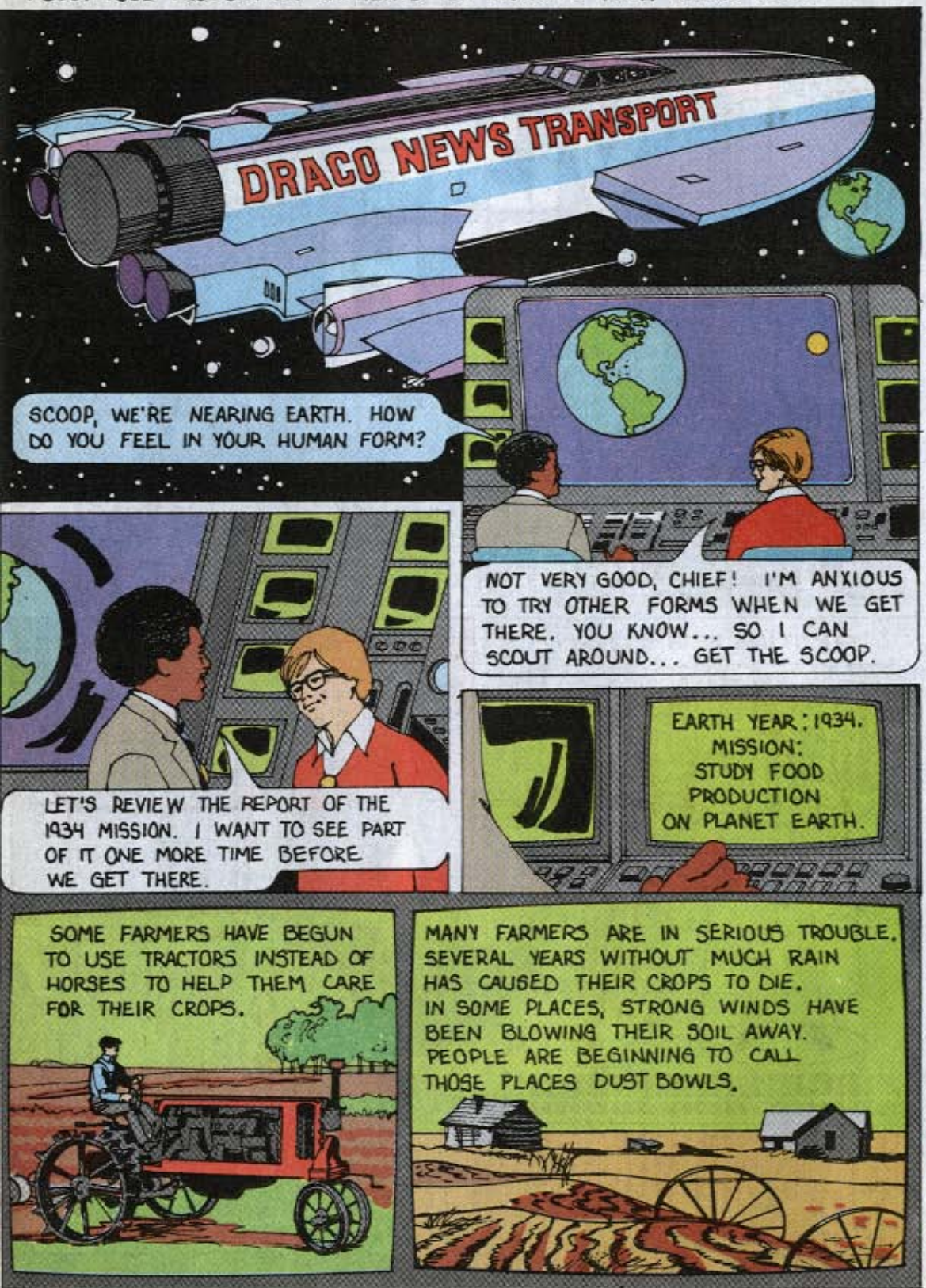
DRACONS VISIT EARTH

To Study Food And The Land!



A SPACESHIP IS MILLIONS OF MILES FROM ITS HOME PLANET, DRACO. AMONG ITS CREW ARE TWO REPORTERS. THEIR MISSION IS TO UPDATE INFORMATION ABOUT FOOD PRODUCTION GATHERED BY DRACONS MANY YEARS AGO.


DRACO NEWS TRANSPORT
SCOOP, WE'RE NEARING EARTH. HOW DO YOU FEEL IN YOUR HUMAN FORM?
NOT VERY GOOD, CHIEF! I'M ANXIOUS TO TRY OTHER FORMS WHEN WE GET THERE. YOU KNOW... SO I CAN SCOUT AROUND... GET THE SCOOP.
LET'S REVIEW THE REPORT OF THE 1934 MISSION. I WANT TO SEE PART OF IT ONE MORE TIME BEFORE WE GET THERE.
EARTH YEAR: 1934. MISSION: STUDY FOOD PRODUCTION ON PLANET EARTH.
SOME FARMERS HAVE BEGUN TO USE TRACTORS INSTEAD OF HORSES TO HELP THEM CARE FOR THEIR CROPS.
MANY FARMERS ARE IN SERIOUS TROUBLE. SEVERAL YEARS WITHOUT MUCH RAIN HAS CAUSED THEIR CROPS TO DIE. IN SOME PLACES, STRONG WINDS HAVE BEEN BLOWING THEIR SOIL AWAY. PEOPLE ARE BEGINNING TO CALL THOSE PLACES DUST BOWLS.

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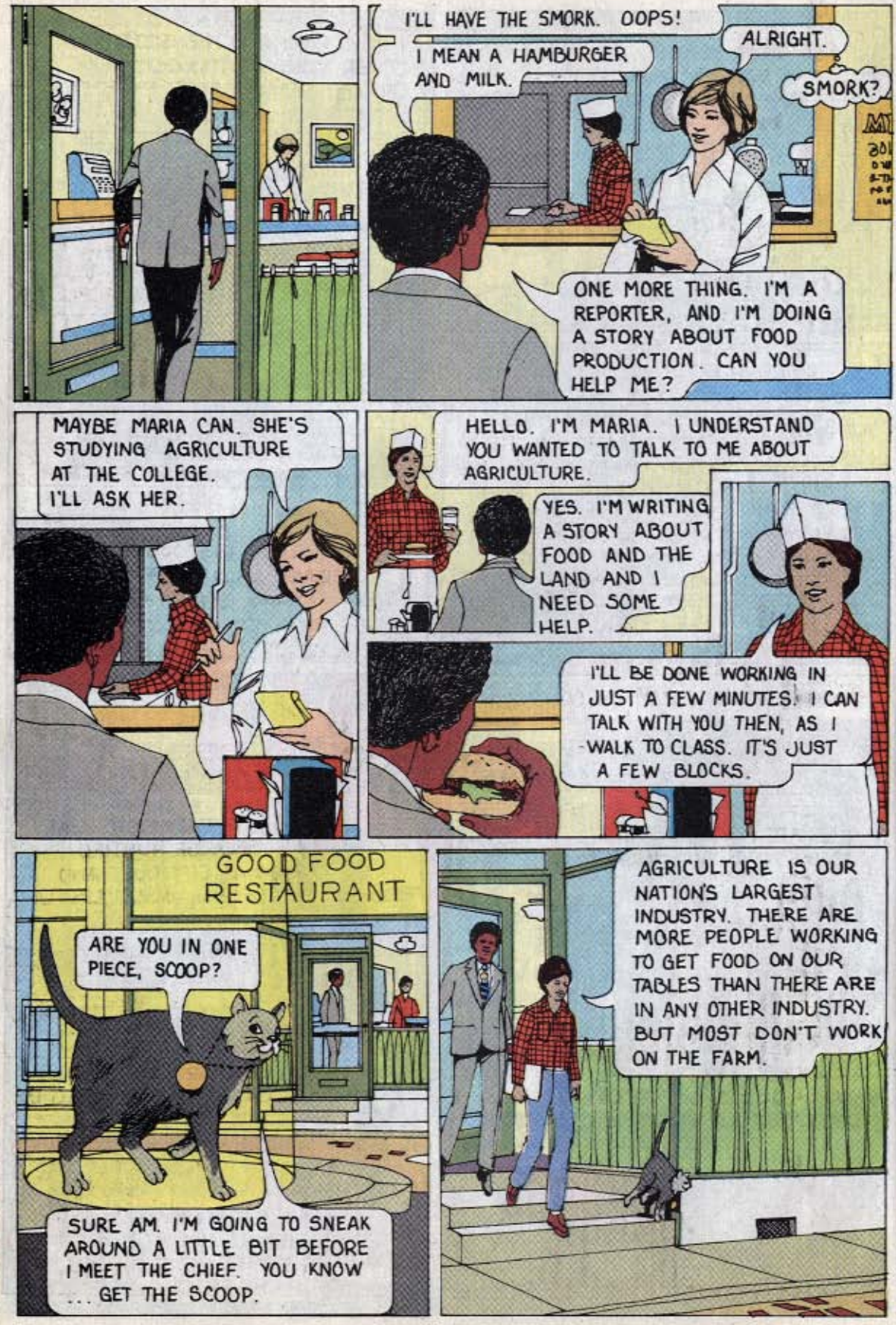
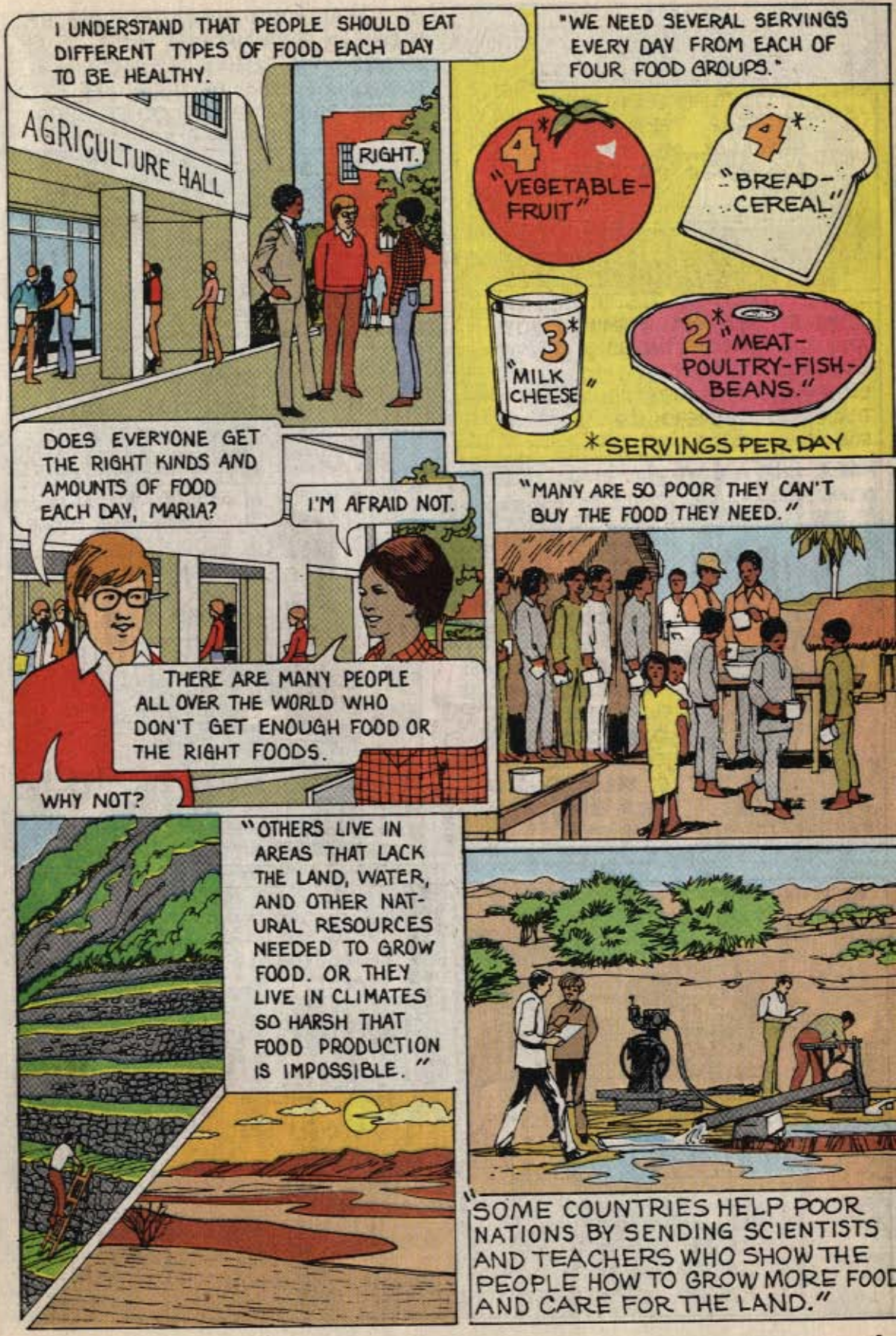
IN OTHER PLACES, RAIN WATER HAS WASHED SOIL OFF OF FARMERS' FIELDS.
HUGH HAMMOND BENNETT AND OTHER CONSERVATIONISTS ARE TELLING HUMANS THAT MANY OF THESE PROBLEMS CAN BE AVOIDED IF THEY TAKE BETTER CARE OF THE LAND. OTHERWISE, FOOD SHORTAGES MIGHT OCCUR.
WE'RE IN EARTH ORBIT, ED.
NICIAN, LOCK ONTO A RESTAURANT ON THE LAND MASS KNOWN AS NORTH AMERICA. COME ON, SCOOP. LET'S GET READY TO BEAM DOWN.
LATER.
READY, SCOOP?
YOU BET, CHIEF!
OKAY, NICIAN. BEAM US DOWN.
GOOD FOOD RESTAURANT
AW, SCOOP, YOU DID IT AGAIN! NICIAN, BEAM HIM UP. THEN SEND HIM BACK IN ONE PIECE.


I'LL HAVE THE SMORK. OOPS!
I MEAN A HAMBURGER AND MILK.
ALRIGHT.
SMORK?
ONE MORE THING. I'M A REPORTER, AND I'M DOING A STORY ABOUT FOOD PRODUCTION. CAN YOU HELP ME?
MAYBE MARIA CAN. SHE'S STUDYING AGRICULTURE AT THE COLLEGE. I'LL ASK HER.
HELLO. I'M MARIA. I UNDERSTAND YOU WANTED TO TALK TO ME ABOUT AGRICULTURE.
YES. I'M WRITING A STORY ABOUT FOOD AND THE LAND AND I NEED SOME HELP.
I'LL BE DONE WORKING IN JUST A FEW MINUTES. I CAN TALK WITH YOU THEN, AS I WALK TO CLASS. IT'S JUST A FEW BLOCKS.
GOOD FOOD RESTAURANT
ARE YOU IN ONE PIECE, SCOOP?
SURE AM. I'M GOING TO SNEAK AROUND A LITTLE BIT BEFORE I MEET THE CHIEF. YOU KNOW ... GET THE SCOOP.
AGRICULTURE IS OUR NATION'S LARGEST INDUSTRY. THERE ARE MORE PEOPLE WORKING TO GET FOOD ON OUR TABLES THAN THERE ARE IN ANY OTHER INDUSTRY. BUT MOST DON'T WORK ON THE FARM.

HELP CHIEF!
WHOA! THIS IS ONE SCARED CAT.
MEET ME AT THE COLLEGE, SCOOP. TRY TO STAY OUT OF TROUBLE.
LATER.
AGRICULTURE INVOLVES GROWING PLANTS AND RAISING LIVESTOCK FOR FOOD. IT ALSO INVOLVES PROCESSING AND TRANSPORTING FOOD, AND SELLING THE FOOD TO PEOPLE.
FARMING BEGAN ABOUT 11,000 YEARS AGO WHEN PEOPLE DISCOVERED HOW TO RAISE CROPS AND LIVESTOCK. THEY TRADED OR SHARED WHAT THEY RAISED WITH OTHERS IN THEIR VILLAGE. MANY PEOPLE IN OTHER COUNTRIES STILL DO THAT, BUT...
BEFORE THEY DISCOVERED THAT THEY COULD GROW THEIR OWN FOOD, HUMANS SPENT MOST OF THEIR TIME MOVING FROM PLACE TO PLACE IN SEARCH OF FOOD.
THEY ATE MOSTLY BERRIES, SEEDS, NUTS, AND INSECTS.
THEY DID NOT EAT MUCH MEAT BECAUSE HUNTING WAS DIFFICULT AND OFTEN UNSUCCESSFUL.
HUMANS BEGAN TO GROW CROPS AND RAISE ANIMALS FOR FOOD AROUND EARTH YEAR 9,000 B.C. THEY ALSO FOUND THAT ANIMALS, SUCH AS OXEN, COULD BE USED TO PULL PLOWS AND CARRY HEAVY LOADS.

THIS LET THEM GROW MORE CROPS THAN THEY COULD BY HAND. THEY BECAME HEALTHIER, AND POPULATION INCREASED.
BECAUSE THEY NO LONGER HAD TO SEARCH FOR FOOD, THEY BUILT VILLAGES IN PLACES WHERE THERE WAS GOOD SOIL AND PLENTY OF WATER.
SOME OF THEM QUIT FARMING AND BEGAN MAKING THINGS LIKE POTS, TOOLS, AND CLOTHING, WHICH THEY TRADED TO FARMERS FOR FOOD CROPS.
... MOST FARMERS SELL THEIR PRODUCTS TO BUSINESSES THAT PROCESS IT INTO FOOD AND SHIP IT TO STORES THAT ARE OFTEN MANY MILES FROM THE FARM.
WHAT DO YOU MEAN "PROCESS THE CROPS"?
LIKE MAKING WHEAT INTO BREAD. YOU KNOW, THE WHEAT HAS TO BE GROUND INTO FLOUR, THEN THE FLOUR IS USED TO MAKE BREAD.
EXCUSE ME, MARIA, THIS IS MY ASSISTANT, SCOOP.
HI.
HI, SCOOP.


I UNDERSTAND THAT PEOPLE SHOULD EAT DIFFERENT TYPES OF FOOD EACH DAY TO BE HEALTHY.
AGRICULTURE HALL
RIGHT.
"WE NEED SEVERAL SERVINGS EVERY DAY FROM EACH OF FOUR FOOD GROUPS."
4* "VEGETABLE-FRUIT"
4* "BREAD-CEREAL"
3* "MILK CHEESE"
2* "MEAT-POULTRY-FISH-BEANS."
*SERVINGS PER DAY
DOES EVERYONE GET THE RIGHT KINDS AND AMOUNTS OF FOOD EACH DAY, MARIA?
I'M AFRAID NOT.
THERE ARE MANY PEOPLE ALL OVER THE WORLD WHO DON'T GET ENOUGH FOOD OR THE RIGHT FOODS.
WHY NOT?
"MANY ARE SO POOR THEY CAN'T BUY THE FOOD THEY NEED."
"OTHERS LIVE IN AREAS THAT LACK THE LAND, WATER, AND OTHER NATURAL RESOURCES NEEDED TO GROW FOOD. OR THEY LIVE IN CLIMATES SO HARSH THAT FOOD PRODUCTION IS IMPOSSIBLE."
"SOME COUNTRIES HELP POOR NATIONS BY SENDING SCIENTISTS AND TEACHERS WHO SHOW THE PEOPLE HOW TO GROW MORE FOOD AND CARE FOR THE LAND."

IS FOOD SOLD TO COUNTRIES THAT NEED IT?
YES, IF THEY CAN AFFORD TO BUY IT. SOME IS GIVEN AWAY, TOO, ALTHOUGH NOT MUCH.
"BUT THAT WON'T SOLVE THE PROBLEM. PEOPLE IN POOR NATIONS MUST LEARN TO USE WHAT RESOURCES THEY HAVE TO PRODUCE MORE OF THEIR OWN FOOD. OR THEY MUST PRODUCE OTHER GOODS THAT THEY CAN TRADE FOR FOOD."
MARIA, WHAT ARE WE DOING HERE?
THIS IS A GREENHOUSE WHERE NEW KINDS OF SEEDS ARE TESTED. SCIENTISTS TRY TO DEVELOP BETTER KINDS OF SEEDS THAT WILL HELP PRODUCE MORE FOOD.
SEE, SCOOP. THE NEW SEED PLANTED HERE PRODUCES BETTER WHEAT SEEDLINGS THAN THE OTHER WHEAT SEED.
SCIENTISTS ARE ALSO TRYING TO DEVELOP BETTER KINDS OF CATTLE AND OTHER ANIMALS THAT MIGHT ALSO IMPROVE OUR FOOD SUPPLY.
MARIA, ARE THERE ORANGE GROVES NEARBY?
NO, SCOOP. IT GETS TOO COLD HERE IN THE WINTER TO GROW ORANGES. YOU SEE, MOST CROPS CAN GROW ONLY IN CERTAIN CLIMATES.

"ORANGES GROW BEST IN WARM, HUMID AREAS, LIKE FLORIDA."
"SOME CROPS, LIKE CRANBERRIES FOR INSTANCE, GROW BEST IN HUMID AREAS WHERE SUMMERS ARE RELATIVELY COOL, LIKE WISCONSIN AND MASSACHUSETTS. THEY WOULD NOT GROW WELL IN FLORIDA."
"FARMERS MUST GROW FOOD CROPS THAT PRODUCE BEST IN THEIR AREA. OTHERWISE THE CROPS WILL DIE AND THE FARMERS WILL LOSE A LOT OF MONEY."
WELL, I'M GOING TO BE LATE FOR CLASS. HERE'S THE NAME AND ADDRESS OF A FRIEND OF MINE WHO FARMS NEAR HERE. HE CAN TELL YOU MORE ABOUT FOOD AND THE LAND.
WE NEED TO GET TO THE HEART OF THIS STORY, SCOOP. I THINK WE SHOULD VISIT THIS FARMER.
GREAT. MAYBE NOW I CAN GET THE SCOOP.
NICIAN, BEAM SCOOP AND ME TO THE FARM, PLEASE.
YES, SIR.
I'VE GOT AN IDEA. I'LL MEET YOU LATER, CHIEF.
BE CAREFUL!

HELLO. MY NAME'S ED ITOR. I'M A REPORTER, AND I'M DOING A STORY ON FOOD PRODUCTION. DO YOU HAVE TIME TO ANSWER A FEW QUESTIONS?

SURE. MY NAME'S JIM. I OWN THIS FARM, AND THIS IS ELLEN, A SOIL CONSERVATIONIST. SHE'S HELPING ME TAKE CARE OF A SOIL EROSION PROBLEM. WHAT DO YOU WANT TO KNOW?

MEANWHILE...
I'LL GET THE INSIDE STORY THIS TIME. DO ANY OF YOU GUYS...

TO START WITH, COULD YOU EXPLAIN WHAT'S HAPPENING HERE?
WE'RE HARVESTING CORN. LOOKS LIKE IT'LL BE ONE OF MY BEST HARVESTS EVER, TOO!

MEANWHILE...
OH, NO! WHERE ARE YOU TAKING ME?
WHAT'S HAPPENING? I'M COMING APART AT THE SEAMS.
I PLANTED A NEW KIND OF CORN SEED AT JUST THE RIGHT TIME THIS SPRING AND USED THE RIGHT AMOUNT OF FERTILIZERS AND PESTICIDES.
...AND NOW I'M HARVESTING AT THE RIGHT TIME. I'VE PUT A LOT OF TIME AND MONEY INTO THIS CORN AND I'M HAPPY TO SEE IT'S PAYING OFF.
I'LL SELL MOST OF IT AND USE THE REST AS FEED FOR MY CATTLE.
SOUNDS LIKE YOU HAVE TO KNOW A LOT TO BE A SUCCESSFUL FARMER.
"I LEARNED A LOT FROM MY PARENTS WHILE GROWING UP ON THIS FARM. AND I STUDIED AGRICULTURE AT THE COLLEGE IN TOWN TOO."

"I'VE BEEN LUCKY, TOO, BECAUSE I USUALLY GET THE RIGHT AMOUNT OF WATER FOR MY CROPS THROUGH RAIN AND SNOW."

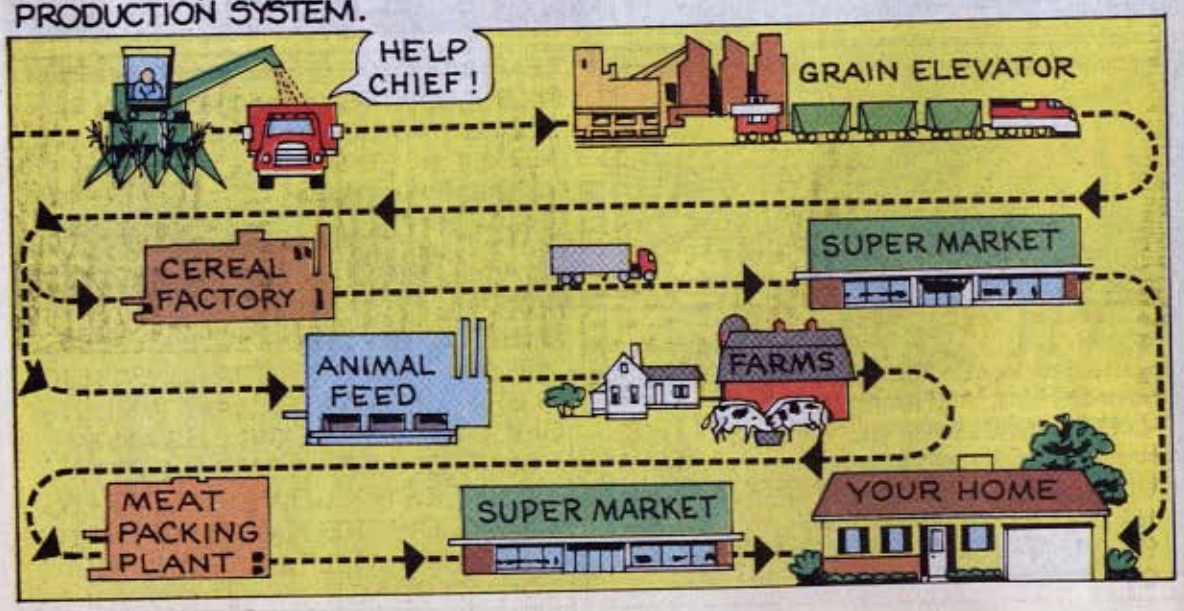
"I'VE GOT RELATIVES WHO LIVE IN THE SOUTHWESTERN PART OF THE UNITED STATES. THEY DON'T GET NEARLY ENOUGH RAIN FOR THEIR CROPS."

"SOME PUMP WATER FROM THE GROUND TO IRRIGATE THEIR CROPS."

"OTHERS IRRIGATE WITH WATER FROM NEARBY RIVERS."

SO, TO BE A GOOD FARMER YOU NEED ENOUGH GOOD QUALITY WATER, GOOD SEEDS, AND ANIMALS THAT WILL PRODUCE BEST IN THIS CLIMATE. AND YOU'VE GOT TO KNOW HOW TO FARM PROPERLY.

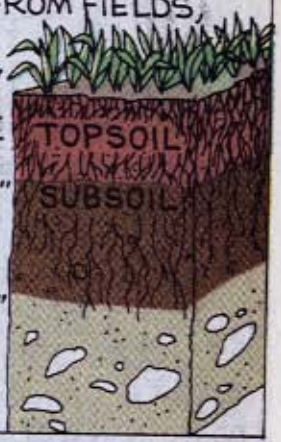
MEANWHILE, SCOOP IS REALLY LEARNING THE INSIDE STORY OF THE FOOD PRODUCTION SYSTEM.



WHEN IT COMES TO PRODUCING FOOD, LAND IS THE MOST VALUABLE RESOURCE. THAT'S WHY JIM ASKED ME TO HELP HIM STOP SOIL EROSION.

SOIL EROSION?

"THE ACTION OF WIND AND WATER CAN REMOVE TOPSOIL, WHICH CONTAINS THE NUTRIENTS CROPS NEED TO GROW WELL. IF TOPSOIL IS LOST FROM FIELDS, FARMERS MUST TRY TO GROW CROPS ON THE LESS PRODUCTIVE SUBSOIL. THAT MEANS LESS FOOD WILL BE PRODUCED."



ERODED SOIL EVENTUALLY MAKES ITS WAY TO RIVERS AND STREAMS. THIS CAN CAUSE WATER POLLUTION AND FLOODING.
SOIL EROSION AND FLOODING CONTRIBUTED TO THE DESTRUCTION OF ANCIENT CIVILIZATIONS AND STILL CAUSE MANY PROBLEMS TODAY. THE SOIL CARRIED BY THE WATER IS LEFT BEHIND WHEN THE FLOOD WATERS RECEDE.

WHAT CAN BE DONE TO PREVENT SOIL EROSION?

FARMERS CAN DO SEVERAL THINGS TO HELP HOLD THE SOIL IN PLACE — PRACTICE SOIL CONSERVATION.

"JIM'S PROBLEM IS THAT WHEN IT RAINS, MOST OF THE WATER ACCUMULATES HERE AND RUNS DOWN THE HILL TO THE ROAD DITCH. YOU CAN SEE THAT THE WATER TAKES A LOT OF THE SOIL WITH IT."

"WE ARE PLANNING TO CONSTRUCT A GRASSED WATERWAY. WE'LL SMOOTH OUT THE GULLIES AND PLANT GRASS ALONG THE PATH THE WATER FOLLOWS. THE GRASS WILL SLOW THE WATER DOWN AND ITS ROOTS WILL HELP HOLD THE SOIL IN PLACE."

I'LL LEAVE THIS PLANT MATERIAL ON THE GROUND AND PLANT CORN THROUGH IT NEXT SPRING. IT HELPS TO SLOW WATER RUNOFF, AND CATCHES AND HOLDS SOIL. MORE WATER WILL SOAK INTO THE SOIL AND WILL BE AVAILABLE TO THE CORN PLANTS WHEN THEY NEED IT.
"JIM STARTED FARMING ON THE CONTOUR SEVERAL YEARS AGO. PLANTING AROUND THE HILL, INSTEAD OF UP AND DOWN IT, ALSO HELPS DECREASE WATER RUNOFF AND SOIL EROSION."
"JIM ALSO USES A CROP ROTATION SYSTEM THAT HELPS CONTROL EROSION. HE PLANTS DIFFERENT CROPS ON THIS FIELD EVERY COUPLE YEARS. ALFALFA WILL FOLLOW NEXT YEAR'S CORN CROP. THIS SHELTERS THE SOIL FROM RAIN BETTER THAN CORN, HELPS TO PREVENT CROP DAMAGE FROM INSECTS AND DISEASE, AND ACTUALLY HELPS THE SOIL REMAIN FERTILE."
IT'S GETTING LATE, ED, AND I'VE GOT A LOAD OF CORN TO TAKE IN, BUT FIRST I WANT TO POINT OUT MY WINDBREAK. THE TREES PROTECT THIS SOIL FROM WIND EROSION.
HELP! CHIEF! HELP!
I'VE GOT TO GET BACK TO THE OFFICE.
THANK YOU BOTH FOR ALL YOUR HELP. IF YOU DON'T MIND, JIM, I'D LIKE TO TAKE A CLOSER LOOK AT THE WINDBREAK.
NICIAN, BEAM ME BACK ABOARD. SCOOP, TOO!
YES, SIR.

WHEW! THANKS, CHIEF! DO YOU KNOW WHAT AN EAR OF CORN GOES THROUGH? BET I WIN THE DRACONTIS PRIZE FOR THIS STORY!
HERE, YOU MIGHT NEED THIS— JUST IN CASE WE FIND CORN ON THE PLANET PAVO— OUR NEXT STOP.
HONEST, CHIEF! I'VE LEARNED MY LESSON. I'LL NEVER LOSE THIS AGAIN, AND I'LL NEVER...
SURE, SCOOP.

Earth mission completed. Conclusion: Food production depends upon soil, water, climate, crops, livestock, and humans. Although millions of humans do not have enough of the right food to eat at this time, there is fertile land available on which food can be produced to feed them all for many earth years to come. It is up to humans to see that the land is used wisely and to develop methods to ensure that they all have an adequate food supply.

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